

REMARKS

These remarks are submitted in reply to the Office Action dated March 01, 2004. Applicants respectfully request reconsideration and further examination of the patent application under 37 C.F.R. § 1.111.

Summary of First Office Action

I. Claims 1, 2, 4, 6, 7, 13 – 15 and 17 - 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins US Patent 4,418,324 in view of Liang et al US Patent 6,597,265.

II. Claims 3 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins US Patent 4,418,324 in view of Liang et al US Patent 6,597,265 and further in view of Sogo et al US Patent 5,192,926.

III. Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins US Patent 4,418,324 in view of Liang et al US Patent 6,597,265 and further in view of Leonard US Patent 3,602,848.

Remarks regarding I:

According to M.P.E.P. §2143, to establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation to combine the references. Second, there must be a reasonable expectation of success. Third, the prior art reference must teach or suggest

all the claim limitations. Applicants respectfully submit, that the Examiner has not established a *prima facie* case of obviousness in this instance.

There is no suggestion or motivation in any of the cited patents to combine them as proposed by the Examiner. The Examiner makes a conclusory statement that the motivation for combining the reference would have been to provide capacitors that have higher Q factor as well as higher power handling. The Higgins patent is 1983 technology (prior to the fruition of voltage tunable dielectric material) directed to interdigital filters, comprising a plurality of conductive strips positioned in a row and electromagnetically coupled to one another. A conductive transmission line is positioned with respect to the row of conductive strips such that the two ends of the transmission line are capacitively coupled to the ungrounded ends of two nonadjacent conductive strips.

It is particularly noted that in Higgins, the frequency of the transmission zeros are adjusted by trimming the ends of the conductive transmission line so as to effect the capacitive coupling between the non-adjacent strips. In the summary of Higgins, the method of varying the capacitance is set forth in the last sentence, stating: “The exact frequency of the transmission zero can be adjusted by trimming the two pads through the use of a laser or an abrasive.” Further, in col. 6, line 51, one method for accomplishing the effecting of the capacitive coupling is set forth. To wit: “By laser trimming the pads and the capacitive coupling between the pads and conductive strips can be varied in order to precisely choose the zero frequency. Other means, such as an abrasive, can also be used to trim the pads.” Applicant submits that it would not be obvious to replace laser trimming the pads of Higgins with using a plurality of tunable capacitors and in particular as set forth in claim 1:

“a plurality of tunable capacitors, each of the tunable capacitors being coupled to one of the resonators;

said tunable capacitors comprising, a first electrode; a tunable dielectric film positioned on the

first electrode; and a second electrode positioned on a surface of the tunable dielectric film opposite the first electrode and wherein for operation at frequencies ranging from 1.0 GHz to 10 GHz, the loss tangent would range from 0.001 to 0.005; for operation at frequencies ranging from 10 GHz to 20 GHz, the loss tangent would range from 0.005 to 0.01; for operation at frequencies ranging from 20 GHz to 30 GHz, the loss tangent would range from 0.01 to 0.02.

Again, applicant submits that the two techniques are substantially distinct and indeed at the time of Higgins the present technology was not even in existence. Therefore, the first criteria for a *prima facie* case of obviousness has not been met.

Second, a reasonable expectation of success has not been shown by the Examiner. The proposed combination of the Higgins and Liang patents would not be capable of performing the operation required by the claimed invention. Indeed, if the laser trimming method for varying the tuning of Higgins were replaced with a plurality of tunable capacitors with tunable dielectric film of the present invention, it is highly unlikely that it would work; even if one skilled in the art could accomplish making such a device. The Examiner, without the hindsight look through the claimed invention, has not shown that proposed combination of the Higgins and Liang patents would have any success, let alone a reasonable expectation of success. Therefore, Applicant's respectfully submit that the second criteria for a *prima facie* case of obviousness has not been met.

Remarks regarding II and III:

As claims 2 - 4, 6, 7, and 12 – 19 depend from claim1 and the rejection for which combine Higgins and Liang or additional references with Higgins and Liang, Applicant submits that, for the reasons articulated above, the rejections for these claims have been traversed.

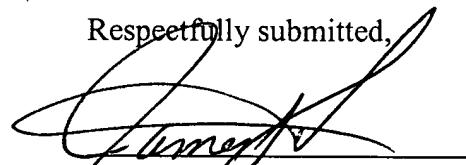
CONCLUSION

From the foregoing, Applicants respectfully submit that all of the stated grounds of rejections have been properly traversed, accommodated, or rendered moot. Accordingly, Applicants respectfully request that the application is in condition for allowance and respectfully request such action.

If the Examiner believes, for any reasons, that personal communication will expedite prosecution of this application the Examiner is invited to telephone the undersigned at the following number: 202-607-4607.

The USPTO is authorized to charge Deposit Account No. 502697 any fees associated with this response.

Respectfully submitted,



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